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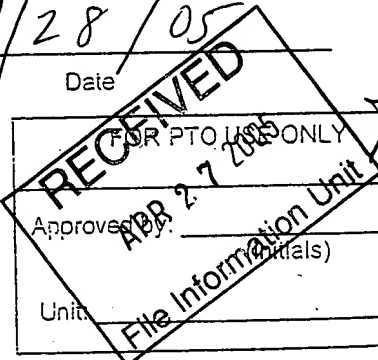
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United States Patent [19]

Harari et al.

[11] Patent Number: 5,719,808

[45] Date of Patent: Feb. 17, 1998

[54] FLASH EEPROM SYSTEM

[75] Inventors: **Eliyahou Harari**, Los Gatos; **Robert D. Norman**, San Jose; **Sanjay Mehrotra**, Milpitas, all of Calif.

[73] Assignee: **SanDisk Corporation**, Sunnyvale, Calif.

[21] Appl. No.: 407,916

[22] Filed: Mar. 21, 1995

Related U.S. Application Data

[60] Continuation of Ser. No. 963,851, Oct. 20, 1992, Pat. No. 5,418,752, which is a division of Ser. No. 337,566, Apr. 13, 1989, abandoned.

[51] Int. Cl.^{6} G11C 11/34

[52] U.S. Cl. 365/185.33; 365/185.22; 365/185.29

[58] Field of Search 365/185, 218, 365/900, 230.03, 104, 185.22, 185.29, 185.33

[56] References Cited

U.S. PATENT DOCUMENTS

3,895,360	7/1975	Cricchi et al.
3,898,632	8/1975	Spencer, Jr.
3,906,455	9/1975	Houston et al.

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

0283238	9/1988	European Pat. Off. .
52-8738	1/1977	Japan .
58-86777	5/1983	Japan .
58-215794	12/1983	Japan .
58-215795	12/1983	Japan .
945695	3/1984	Japan .
59-162695	9/1984	Japan .
59-186015	10/1984	Japan .
62-188099	8/1987	Japan .
62-283496	12/1987	Japan .
62-283497	12/1987	Japan .
63-18596	1/1988	Japan .
63-106989	5/1988	Japan .
63-183700	7/1988	Japan .
63-225999	9/1988	Japan .

OTHER PUBLICATIONS

J.E. Brewer et al., "Block–Oriented Random Access MNOS Memory," National Computer Conference and Exposition. Chicago, May 6–10, 1974, AFIPS Conference Proceedings. vol. 43.

J.E. Brewer et al., "Low Cost MNOS BORAM." Proceedings of IEEE National Aerospace Electronics Conference. NAECON '77, May 17–19, 1977.

J.R. Cricchi et al., "Nonvolitile Block–Oriented RAM." IEEE International Solid–State Circuits Conference. Feb. 13–15, 1974, Digest of Technical Papers.

Raul–Adrian Cernea et al.. "A 1Mb Flash EEPROM." 1989 IEEE International Solid–State Circuits Conference.

Kenneth L. Short, "Microprocessors and Programmed Logic." second edition. Ch. 13.2.2 Electrically Erasable Programmable Read Only Memory. EEPROM Prentice Hall International; 1987.

(List continued on next page.)

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[57] **ABSTRACT**

A system of Flash EEprom memory chips with controlling circuits serves as non-volatile memory such as that provided by magnetic disk drives. Improvements include selective multiple sector erase, in which any combinations of Flash sectors may be erased together. Selective sectors among the selected combination may also be de-selected during the erase operation. Another improvement is the ability to remap and replace defective cells with substitute cells. The remapping is performed automatically as soon as a defective cell is detected. When the number of defects in a Flash sector becomes large, the whole sector is remapped. Yet another improvement is the use of a write cache to reduce the number of writes to the Flash EEprom memory, thereby minimizing the stress to the device from undergoing too many write/erase cycling.

23 Claims, 5 Drawing Sheets